
Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Federal-State Joint Board on) CC Docket No. 96-45
Universal Service)
)
Forward-Looking Mechanism)
for High Cost Support for) CC Docket No. 97-160
Non-Rural LECS)

TO: The Commission

REPLY COMMENTS OF NEVADA BELL, PACIFIC BELL, AND
SOUTHWESTERN BELL TELEPHONE COMPANY

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INDEX

I. ANY MODEL ADOPTED IN THIS PROCEEDING MUST BE SUBJECT TO VERIFICATION AGAINST EMPIRICAL DATA	2
II. THE GOAL OF PRODUCING A COST PROXY MODEL THAT CAN BE USED TO PRICE UNBUNDLED NETWORK ELEMENTS IS AN IRRELEVANT FACTOR	5
III. MODELING FORWARD-LOOKING ECONOMIC COST	5
C. Platform Design Components and Input Values	
1. Customer Location	
b. Distribution of Customers	
c. Line Count	8

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**REPLY COMMENTS OF NEVADA BELL, PACIFIC BELL, AND
SOUTHWESTERN BELL TELEPHONE COMPANY**

Nevada Bell, Pacific Bell, and Southwestern Bell Telephone Company (collectively, "SBC LECS") provide these Reply Comments to the comments filed in response to the Commission's Further Notice of Proposed Rulemaking ("FNPRM"), FCC 97-256, released July 18, 1997, pertaining to III.C.1, "Platform Design Components and Input Values - Customer Location." By filing these comments, none of the SBC LECS or any affiliate waives, prejudices, or otherwise adversely affects any appeal or other recourse from any Commission or State proceeding or action, including the Report and Order.¹

In accordance with the FNPRM instructions, this pleading is structured in the same order as the FNPRM, including its heading and associated numbering.

¹ *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 97-157 (released May 8, 1997).

I. ANY MODEL ADOPTED IN THIS PROCEEDING MUST BE SUBJECT TO VERIFICATION AGAINST EMPIRICAL DATA

A number of commenters have correctly noted that the outcomes of the universal service cost proxy model must be validated against observed, empirical data. Without verification, the result of the model could be "garbage out" regardless of one's belief of whether there was "garbage in." Since Section 254 requires support to be "sufficient," the possibility of "garbage out" must be eliminated.

AT&T/MCI, however, take the opposite approach -- that observed data taken from a real deployed and operating network actually providing universal service should be treated as suspect "garbage."² As formulated by those carriers, the results of a model that has not once been used to deploy and operate a working network (and indeed never will be) should be treated as true and accurate, and that the burden for explaining the deviation from real world information should be shifted to the current providers of universal service that have that information.³ The proposed shift in the burden of explaining differences cannot be reconciled with the fact that those real networks and costs have been subject to untold numbers of formal and informal reviews and audits by the Commission and its State counterparts, and that any incentives for incurring unnecessary costs and expenses have been eliminated by regulating non-rural local exchange carriers through alternate means (*e.g.*, price caps).

² AT&T/MCI, p. 11.

³ AT&T/MCI, p. 11. The ancillary criticisms levied against incumbent local exchange companies' information-providing are simply not supportable. For example, Southwestern Bell Telephone Company has provided a by-wire center cost comparison between its actual costs and the Hatfield model's outputs for the State of Texas. That hardly constitutes "cherry picking."

Any model is subject to any number of unknown errors, especially one as complex and large as will apparently be eventually created and adopted here. Any such errors cannot be corrected until detected and analyzed through model validation. Without such a process, there is simply no way to know, for example, whether improving the accuracy of the platform (model algorithms not subject to user control) or input values (subject to user control) will improve the results of the model. The underlying premise of this proceeding is that increasing the precision with which certain variables (*e.g.*, terrain factors) are estimated, when there are inaccuracies in other variables (*e.g.*, household distribution within Census Block Groups), will necessarily increase the precision of the resulting cost estimates. This assumption could very easily be wrong. In fact, it is possible that the Benchmark Cost Proxy Model ("BCPM") and Hatfield platforms produce errors in opposite directions, so the "correct" input values may differ depending upon which of the two models is being discussed.⁴

Perhaps the most essential algorithms in the BCPM and the Hatfield model are those used for the network architectures and customer locations. Each model makes stylized assumptions about the shapes of Census Block Groups ("CBGs") and associated household distributions, and depend upon on a hypothetical network configuration to provide universal service within those

⁴ The "Theory of Second Best" is instructive for the current process. The "Theory of Second Best" states that eliminating a distortion in one market (*e.g.*, moving price closer to marginal cost) is not necessarily welfare enhancing if distortions exist elsewhere in the economy. This theory can thus be crudely analogized in terms of automobile wheel alignment: if one wheel is out of alignment, it does not necessarily improve overall performance to move the other three wheels closer to "true" alignment. And, in fact, you may make performance worse. Applied to this process, the Theory of Second Best would hold that estimating one variable in a model with greater precision when other variables are measured with error does not necessarily improve the overall performance of the model. *See also* "Comments of TDS Telecommunications Corporation on Customer Location Issues," p. 4.

distributions. To make any determination about the reasonableness of those algorithms, model validation against the actual costs incurred in serving existing customers is more essential than ever. If that validation process reveals that these forward-looking cost estimates vary from actual costs, then the differences should be capable of identification, explanation, and quantification.

Indeed, without that process the "universal service cost proxy model" would fail to be a model in any sense of the word.⁵ The output of the "model" instead would only act as a declaration that the costs of providing universal service should be different than the actual observed costs of providing universal service to actual customers, with the sheer size of the "model" being employed as a justification for that declaration. The model thus becomes an excuse for the difference, and is no less arbitrary than simply choosing any other number. In terms of a comment made at the Commission's Cost Proxy Model Workshop, validation is not an optional exercise.

⁵ In the words of economist Paul Krugman,

any kind of model of a complex system – a physical model, a computer simulation, or a pencil-and-paper mathematical representation – amounts to pretty much the same kind of procedure. You make a set of clearly untrue specifications to get the system down to something you can handle; those simplifications are dictated partly by guesses about what is important, partly by the modeling techniques available. And the end result, if the model is a good one, is an improved insight into why the vastly more complex real system behaves the way it does . . . And how do you know that the model is good? . . . it is a good model if it succeeds in explaining or rationalizing some of what you see in the world in a way that you might not have expected.

Paul Krugman, Development, Geography, and Economic Theory, The MIT Press, 1995, pp. 69-71.

II. THE GOAL OF PRODUCING A COST PROXY MODEL THAT CAN BE USED TO PRICE UNBUNDLED NETWORK ELEMENTS IS AN IRRELEVANT FACTOR

This proceeding was instituted to address costing for universal service under Section 254. However, at least one commenter continues to argue positions based on the possibility that the universal service cost proxy model might be used to price unbundled network elements ("UNEs").⁶ The Commission must ignore those considerations. As established by the Eighth Circuit, UNE pricing is a matter within the sole authority and jurisdiction of the States. Iowa Utilities Bd. v. FCC, No. 96-3321, slip opinion (8th Cir., July 18, 1997). For the Commission to consider such issues in constructing a universal service cost proxy model would constitute clear error.

III. MODELING FORWARD-LOOKING ECONOMIC COST

C. Platform Design Components and Input Values

1. Customer Location

b. Distribution of Customers

The AT&T/MCI comments reveal a fundamental inconsistency between what they profess to support versus what the Hatfield model actually does. At one point, AT&T/MCI state that "customer location is the one feature of the existing network that unequivocally must remain the same regardless of the forward-looking mechanism employed, even scorched earth." AT&T/MCI Comments, p. 10 n.10. Earlier in those comments, AT&T/MCI argued for the use of their Hatfield model's method of clustering and spacing customers for estimating loop lengths.

⁶ WorldCom Comments, p. 2.

AT&T/MCI Comments, pp. 5-9. Perhaps the difference between word and deed is the emphasis AT&T/MCI places on the word "accurate" when agreeing that an "accurate population clustering algorithm 'would more accurately distribute customers . . . [and] generate more accurate estimates of loop length and, therefore of the cost of the outside plant.'" AT&T/MCI Comments, pp. 5, 6 (underlining in original) (quoting FNPRM, ¶ 44). However, AT&T/MCI have provided no quantitative evidence that this hypothetical clustering phenomenon actually occurs or that it produces more accurate results. Moreover, for AT&T/MCI to complain that they have only had a preview of the new BCPM process when AT&T/MCI has been no more forthcoming with its continuous changes to the Hatfield model is remarkable.

At any rate, no single algorithm will ever be able to accurately depict where customers locate. Customers locate where customers locate due to any number of unique characteristics (e.g., terrain, lakes, rivers, existing roads) that obviously vary from area to area. Contrary to the implication of AT&T/MCI, customer location is not a "feature of the existing network" -- it is the sole result of those individual decisions. In this area particularly, the model must be validated against actual loop length. Otherwise, the Commission can never know whether the hypothetical network it is building with the universal service cost proxy model would even reach to customer locations.

Geocoding is not a quick, easy panacea to the customer location issue. TDS Telecommunications Corporation correctly noted that there are costs and burdens that are associated with geocoding. Southwestern Bell Telephone recently geocoded customers in one Texas wire center to CBGs in order to get a more accurate picture of the process and the resources required. Geocoding that one wire center required 83 person-hours. Even after

developing a more efficient process for geocoding subsequent wire centers, costs are projected to be approximately 60 person-hours for each wire center to reach a geocoding level of 99+% of customers. Southwestern Bell Telephone ("SWBT") has approximately 550 wire centers in Texas alone, or an estimated 33,000 hours, or 825 weeks. Performing such a mapping, much less completing that project in the time frame likely desired, would be extremely burdensome and demand resources that probably do not exist.

This estimate is likely conservative. Texas counties are in the process of addressing locations as part of a mandated State-wide program. As of January 1, 1997, only 28 of 254 Texas counties had completed this addressing requirement. The test wire center was in one of those 28 completed counties, thereby making easier the matching of SWBT record addresses to those contained in commercially available software. In the absence of a standardized address, the same location may be listed under different addresses, resulting in fewer matches between SWBT's records and address data contained in the commercial software. The fewer matches, the greater the need for manual work, and the more hours required. Exacerbating matters is that in rural areas, where standardized addresses are less likely to exist and matches less frequent, the incentive for software providers to stay current is much less due to the lack of any demand for the address data.

In any event, the costs of geocoding would represent a new expense incurred solely for universal service purposes. Assuming *arguendo* that the Commission can order geocoding (which is not conceded), the costs associated with any such process must be included as part of the universal service fund, and used to reimburse the parties actually performing the geocoding (no portability).

c. Line Count

One issue that received a significant amount of comment was the use of a 10% "closing factor" for line counts should be adopted. The SBC LECS agree with commenters like GTE Service Corporation that actual line counts should be used.⁷ There is no need to use an estimated line count when the actual counts are available by wire center, and are being provided by some carriers. To ignore actual line count information that is available in favor of an algorithm with a $\pm 10\%$ margin of error would be unreasonable, whether used for sizing the fund or distributing support. If areas smaller than wire centers are used for costing purposes, then estimated line

⁷ GTE Comments, pp. 13, 14.

counts must be reconciled with actual line counts, to avoid double or deficient counting
Otherwise, such inaccuracy would lead to support that was not "specific, predictable, and
sufficient."

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September 10, 1997

Certificate of Service

I, Elaine Temper, hereby certify the reply to CC. Docket Nos. 96-45 & 97-160 for Nevada Bell, Pacific Bell and Southwestern Bell Telephone Company has been served this 10th day of September, 1997 to the Parties of Record.

A handwritten signature in cursive script, reading "Elaine Temper", is written over a horizontal line.

Elaine Temper

September 9, 1997

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